BIOLOGY

Food Isn't What It Used to Be — and Neither Is Public Health

Industrial agriculture with its genetically engineered crops, pesticides and soil destruction has led to a decline in the nutritional value of food — and nutrition-deficient food is linked to a higher incidence of viral illnesses, gluten sensitivity, autism, dementia, depression and more.

By Dr. Joseph Mercola

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Story at a glance:

- Multiple challenges contribute to the declining nutritional value researchers find in plants, grasses and grains, including monocropping, genetically modified crops and the destruction and depletion of soil health
- As nutrient density falls so does public health. The U.S. spends $4.3 trillion on health care each year which is more than any other nation. Deficiencies are linked to a higher incidence of viral illness, gluten sensitivity, autism, dementia, depression and more
- The U.S. government admits poor eating has led to nearly half of all Americans living with at least one chronic disease. However, while junk and snack food companies seem to garner consumers interested in organic products, the essential role nutrient density plays in overall health is rarely discussed
- Biodynamic and regenerative farming choices offer hope after chemical-based agriculture has destroyed rural economies, raised air and water pollution, destroyed pollinators and diminished the nutrition of our health

The [largest studies](#) to draw attention to the declining nutrient value in fruits and vegetables were published in 2004 in the Journal of the American College of Nutrition.

The researchers used data gathered from 1950 to 1999 and found that out of 43 foods evaluated, there were reliable declines in six nutrients. Those nutrients include protein, riboflavin, vitamin C, calcium and phosphorus.

The researchers evaluated data on seven other nutrients for which they found no statistically reliable changes.

The team concluded that the declines were easily explained by changes in cultivated varieties and these declines may be a trade-off between cultivation to raise yield and an essential to nutrient content.

Your body depends on essential nutrients for growth and development, and to maintain optimum health. When you're experiencing deficiencies, it can have a significant impact on immunity, wound healing, bone health and much more.

Your body uses [protein](#) to build muscles, manufacture hormones and create antibodies.

[Vitamin C](#) is an integral part of your immune system and [riboflavin](#), which is one of the eight B vitamins, helps convert food into energy.

Deficiencies in any of these nutrients have a fundamental impact on overall health and wellness. Research into these foods provide your body with more of what it needs to support good health.

[Nutrient density](#) considers these micronutrients such as protein, fats and carbohydrates and micronutrients, which include vitamins and minerals, necessary for normal physiological functioning.

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Declining nutritional values affect produce and meat

Research within the last five years has demonstrated a decline in nutrients, including iron content in vegetables grown in Canada.

The researchers looked at the [iron content](#) of vegetables and legumes and noted a decrease of 20% to 37% in spinach, collard greens, cauliflower and green beans and pronounced reductions in legumes.

The researchers warned that this trend could [have](#) [become](#) more popular, [monitoring nutrient composition](#) is "strongly recommended."

Another study noted a 22% decline in protein content in [wheat](#) and notable reductions in manganese, zinc, magnesium and iron. The impact of declining nutrient density in produce and grain affects not only vegetarians but meat eaters, too.

[Livestock](#) is fed less nutritious grasses and grains, which in turn has an impact on many animal-derived products that are not produced on biodynamic or [regenerative](#) farms, including meat, dairy and eggs.

These studies demonstrate that it turns out you can simultaneously gain weight and be starved of vital nutrients essential to good health. Donald R. Davis of the University of Austin was the first author of the 2004 study and worked on subsequent papers on the same subject.

He commented:

"Efforts to breed new varieties of crops that provide greater yield, pest resistance and climate adaptability have allowed crops to grow bigger and more rapidly but their ability to manufacture or uptake nutrients has not kept pace with their rapid growth."

In addition to declining nutrient value, world crises are making a bad problem worse. Ukraine has been called "the breadbasket" of Europe as the country is responsible for producing and exporting roughly 12% of all food calories traded on the international market.

Russia is also a major exporter, and the two countries together account for nearly 30% of global wheat exports, nearly 20% of the world's corn and more than 80% of the sunflower oil.

The U.S. Department of Agriculture projected that wheat exports from Russia and Ukraine would be down by more than 7 million metric tons in 2022.

According to a report in January, the [exports from Ukraine](#) had reached 23.6 million metric tons of grain, which had fallen from 33.5 million recorded at the same time in the previous season.

Ukraine's government reported that the grain harvest would reach 51 million metric tons, a decline from the record 86 million in 2021 because of a loss of land and lower yields.

By July 2022, the United Nations had brokered the Black Sea Grain Initiative between Russia and Ukraine. This allowed Ukraine to export grain through the Black Sea from ports that had been blocked since mid-February.

While the initiative helped facilitate exports from Ukraine, price volatility for wheat had reached its highest level in more than 15 years. International markets adjusted and adapted, resulting in higher-priced foods that nearly everyone has experienced at the grocery store.

According to data from the Inter-American Institute for Cooperation on Agriculture, the change in wheat exports from 2021 to 2022 dropped by 5.3 million metric tons in Ukraine, 8.5 million metric tons in Argentina and by 16.5 million metric tons in Russia.

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Perfect storm threatens public health

As crop nutrient density declines, so does public health.

Nutritional deficiencies are linked to a higher incidence of viral illness, gluten sensitivity, autism, dementia and depression to name a few. Multiple challenges have arisen that appear to be contributing to this issue of food insecurity.

As Davis noted, eight plants have resulted in lower nutrient densities, National Geographic explains that crops with higher yields are grown in fields with finite resources.

This means that the nutrients must be distributed across a greater volume of produce, which in effect, dilutes the nutrient value. Another challenge is growing nutrient-dense crops is soil damage from high-yield practices, such as tilling, monocropping and GMO seeds.

Most crops benefit from partnerships with soil fungi as they improve the plant's ability to absorb nutrients and water. Yet these high-yield practices hurt beneficial fungal growth.

Growing just one crop species, also called monocropping or monocultures, increases the farmer's efficiency in the short-term but it also increases the risk of disease and pests and leads to soil exhaustion.

Genetically modified crops gained widespread commercial use by 1996 and today, most corn, soybean, cotton and canola are genetically modified.

While some continue to promote genetically modified seeds and the subsequent high-dose herbicides and pesticides used to control weeds and pests, further study reveals how this damages soil microbes and subsequently our food supply.

Glyphosate is one of the most widely applied broad-spectrum herbicides in agriculture.

However, as the Soil Association notes, glyphosate negatively affects soil bacteria and forms beneficial fungi that live near plant roots.

Another factor that plays a role in reducing crop nutrient density is the use of nitrogen fertilizers.

These fertilizers consistently favor the growth of pathogenic fungi while harming beneficial fungi necessary for strong plant growth. Net corporate farmers grow reliant on nitrogen and phosphorus fertilizers.

The combination of the breakdown in logistics during the pandemic and the later conflict in Russia and Ukraine led experts to predict fertilizer prices could double in the following growing seasons.

Nearly 40% of the global export of potash, a key fertilizer ingredient, and 48% of ammonium nitrate is exported from Russia.

Prices rose in 2022 but dropped in the first quarter of 2023. However, experts believe this trend may not continue and likely is giving farmers false hope as [experts anticipate price reductions could be temporary.](#)

Improving soil health can't make junk food healthy

As more consumers are looking for organic products, more manufacturers of snacks and [junk foods](#) are seeking to capitalize on the trend.

For example, Annie's, a division of General Mills, advertises "advancing regenerative farming practices" in their limited-edition Organic Mac & Cheese and Organic Bunny Grahams.

However, there is a range of practices that could be referred to as regenerative, even though they're only slightly different from conventional, Chemical Farming.

The fact that General Mills is partnering with Bon & Jorry's to promote their brands is [another example](#) of [highly-processed junk food](#) like [mac and cheese](#), [cookies](#) and [concentrated animal feeding operation](#) it can seem is another [struggle](#) [path](#) forward.

While it will take farmers, businesses and consumers to advance regenerative practices, you have to be skeptical of this [old](#) alliance of junk food products to promote regenerative agriculture.

The falling nutrient density in produce is especially concerning if consumers follow manufacturers' push for a primarily plant-based diet.

Much, but not all, of the [fake food](#) promoted by globalists is plant-based. The rest is a combination of lab-grown slurry altered using advanced technology to increase consumer appeal.

The underlying truth is that improving soil health and raising plants' nutrient density cannot make junk food healthy. Instead, most Americans need to start eating real food to save the planet and improve their health.

Eating organically produced foods is important, but when these are processed foods, it doesn't matter if they're organic and regeneratively grown, your health still suffers from nutritional imbalances.

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Biodynamic and regenerative farming choices offer hope

Chemical-based agriculture has destroyed rural economies, raised air and water pollution, destroyed pollinators and biodiversity, increased soil erosion and lost fertility.

The U.S. spends $4.3 trillion on healthcare each year, which is more than any other nation and yet public health just keeps getting worse.

It's clear that we live in an increasingly toxic environment, eating cheap junk-filled foods, while nearly half of all Americans live with one or more chronic diseases that even the government admits "many of which are related to poor nutrition and lifestyle."

In 2010, over 90% of Americans did not eat the U.S. Food and Drug Administration's recommended intakes of the most important vitamins and minerals necessary for health and the number didn't change in 2020.

And it's apparent from mounting evidence that nutrient density means it will take more food to achieve the same nutrition.

Research consistently demonstrates that organically produced foods are significantly higher in antioxidants, especially in non-GMO regenerative systems.

While there are separate efforts to create certifications for regenerative agriculture, it's worth noting that the "gold standard" certification already exists.

Biodynamic farming is a holistic approach that focuses on the natural use of the soil. It was first introduced by Austrian scientist Rudolf Steiner and is an approach that provides for superior harvests when compared to conventional chemical-based agriculture.

Yet at the same time, it also helps to heal the soil damage caused by conventional growers.

Biodynamic farming provides a higher volume of crops with increased nutrient density and biodynamic farms are completely self-sustaining.

For example, most of the feed for the livestock originates on the farm. Organic certifications are next best as strangers as biodynamic certifications.

For example, a farmer can section off part of the farm for organic goods, but 100% of a biodynamic farm must be organic.

The best hope for the future of the world's food supply is for farmers to embrace biodynamic certification or [graduate](#) numbers rather than trying to invent new regenerative standards to compete with organic certifications.

Originally published by Mercola.

The views and opinions expressed in this article are those of the authors and do not necessarily reflect the views of Children's Health Defense.

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Dr. Joseph Mercola
Dr. Joseph Mercola is the founder of Mercola.com.

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Mandee
2 days ago
Once again, Mercola banking a strictly 100% plant-based diet. Stopped reading...
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Rihanna
3 days ago
Love of nutrition in whole foods ... absolutely. Yet so many people cannot understand why people should use quality supplements (depending on their deficiency).
I am tired of hearing 'you can get all your nutrients through food.' NO YOU CAN'T, in today's world. Everyone suffers from deficiency on some level, so smart supplementation is the best option.
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Forrest
3 days ago
That supplementation needs to be bioavailable, however. The supplement industry is rife with misleading claims and straight up lies. Scientific studies can be (and usually are) designed to support whatever the author wants to say. Mercola is one of the few gurus to the work for them (especially the rubric definite needed to become one).
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JJ
3 days ago
Not one place has the supplement? How do you know whole in a capsule? Maybe the supplement was not produce with fertilizer seed and good soil as much as possible. Sick and warped mind there.
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Rhonda Shadow
13 hours ago
Even 'biodynamic' farming makes no difference, when worldwide, soil, water and air are contaminated with pesticides, herbicides, fungicides, petrochemicals and contaminated forms of aluminum, adulterants, barium, polymers, genetically engineered viruses, known what else at any given time), which has been put into the environment and are accumulating. The psychopaths responsible are determined to eradicate all life forms and are succeeding. See agriculturalsociety.org for extensive and indisputable evidence.
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Jo
3 days ago
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Leslie Taylor
a day ago edited
Mercola writes, 'Biodynamic farming is a holistic approach that focuses on the natural use of the soil. It was first introduced by Austrian scientist Rudolf Steiner and is an approach that provides for superior harvests when compared to conventional chemical-based agriculture.' Rudolf Steiner (1861-1925), was the founder of Waldorf schools. Waldorf schools are known for their occult teachings and esoteric practices. Waldorf schools were founded by